ALCOHOL AND PREGNANCY

Some experts say moderate drinking during pregnancy is okay, but there are others who believe taking even one drink is like playing Russian Roulette with your baby's health.

One thing is clear: if you are pregnant and take a drink -- a glass of wine, a beer or a cocktail -- your unborn child takes the same drink. Whatever you eat or drink while pregnant goes directly through your bloodstream into the placenta. If you're having a drink, baby is too. For the unborn child, the alcohol interferes with his ability to get enough oxygen and nourishment for normal cell development in the brain and other body organs.

Research has shown that a developing fetus has very little tolerance for alcohol and infants born to mothers who drink during pregnancy can have serious problems. Alcohol can kill developing brain cells, can slow down growth of the brain, and causes tangles of the neural connections in the brain.

The first two weeks, before the placenta is developed and functioning, the fetus is relatively safe from alcohol exposure.

About the time the woman misses her first period is the time that the baby becomes vulnerable to damage. The organs are all formed by the 8th week. Most physical birth defects occur from the 3rd to the 8th week.

The brain is developing during the entire pregnancy and is vulnerable to damage at all stages.

1st Trimester:
Alcohol kills developing neurons

2nd Trimester:
Alcohol causes disorganization of neurons, delay of cell migration and interferes with neurotransmitters.

3rd Trimester and Beyond
Alcohol interferes with the connections of neurons and higher-level cell organization.

The term "alcohol-related birth defects" (ARBD) describes anatomic or functional abnormalities attributed to prenatal alcohol exposure. The term "possible fetal alcohol effect(s)" (FAE) indicates that alcohol is being considered as one of the possible causes of a patient's birth defects. The frequent use of the term to indicate a birth defect judged milder than FAS is incorrect, although many continue to use it that way.

Mental handicaps and hyperactivity are probably the most debilitating aspects of FAS, and prenatal alcohol exposure is one of the leading known causes of mental retardation in the Western World. Problems with learning, attention, memory, and problem solving are common, along with incoordination, impulsiveness, and speech and hearing impairment. Deficits in learning skills persist even into adolescence and adulthood.

It is generally accepted that the adverse effects of prenatal alcohol exposure exist along a continuum, with the complete FAS syndrome at one end of the spectrum and incomplete features of FAS, including more subtle cognitive-behavioral deficits, on the other. Thus, infants with suboptimal neurobehavioral responses may later exhibit subtle deficits in such aspects of daily life as judgment, problem solving, and memory.

Children who meet the full criteria for FAS are born only to those mothers who consume large amounts of alcohol during pregnancy. However, neurobehavioral deficits and intrauterine growth retardation are found in infants born to mothers who reported themselves to be moderate alcohol consumers during pregnancy. Effects occur at even the lowest reported levels of alcohol intake, so a clear minimum amount of alcohol to produce an effect could not be defined.

Given the range of defects that result from prenatal alcohol exposure, the search for an overall threshold for fetal risk may be unreasonable. Instead, each abnormal outcome in brain structure and function and growth might have its own dose-response relationship. Thus, heavy alcohol consumption throughout pregnancy results in a wide variety of effects characteristic of FAS, while episodic binge drinking at high levels results in partial expression of the syndrome, with the abnormalities being unique to the period of exposure. Vulnerability of individual organ systems may be greatest at the time of their most rapid cell division.

Criteria for defining FAS are

- prenatal and/or postnatal growth retardation (weight and/or length below the 10th percentile);
- central nervous system involvement, including neurological abnormalities, developmental delays, behavioral dysfunction, intellectual impairment, and skull or brain malformations; and
- a characteristic face with short palpebral fissures (eye openings), a thin upper lip, and an elongated, flattened midface and philtrum (the groove in the middle of the upper lip).

References

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OVERVIEW OF FETAL ALCOHOL SYNDROME, Fetal Alcohol Syndrome Community Resource Center, http://www.come-over.to/FASCRC/.

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For more information, contact:

Alcohol and Drug Information Clearinghouse
Nebraska Council to Prevent
Alcohol and Drug Abuse
http://www.necouncil.org
650 J Street, Suite 215
Lincoln, NE 68508
nebraskacouncil@navix.net
402-474-0930
-or-
Community Health Plaza
7101 Newport, Suite 202
Omaha, NE 68152
402-572-3075

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